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EXAMINER	
NGUYEN, PHILLIP H	

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2191	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/633,884	KRAISS ET AL.	
	Examiner	Art Unit	
	Phillip H. Nguyen	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20050805,20040401,20031110*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the original filling of August 4, 2003. Claims 1-20 are pending and have been considered below.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 5 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/454,370 in view of Tamayo et al. (US 6,941,318). Although, the conflicting claims are not identical, they are not patentably distinct from each other because both applications use steps that are analogous. For example, claim 5 of instant application recites, "obtaining a first task request from a front-end software application, the first task

request containing a first set of input values and a task name" and claim 1 of copending Application No. 10/454,370 recites, "receive a request from a software application to execute an analytical task, the request including a task name and input information". In effect both recites the same thing. The copending Application No. 10/454,370 dose not explicitly disclose version of the data mining model. However, Tamayo discloses an analogous system that generates callable version of data mining model to improve the transparency of data mining models. The callable version of the data mining model can be generated or updated (Col 4, line 52-53, the updated version of data mining model is a new version of data mining model). It would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize the advantage of Tamayo's approach and combine Tamayo's approach with copending Application No. 10/454,370. One of the skilled in the art would have been motivated to combine Tamayo's approach with copending Application No. 10/454,370 because it could be more easily interpretable by human users (Col 1, line 53).

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-4 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-4 recite the computer system, but do not provide any hardware that performs those steps. It appears reasonable to interpret

this computer system by one of the ordinary skill in the art as software, per se, and therefore, is non-statutory.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 6, 9 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language of the claims recites the limitation "substantially matches". It is unclear to the examiner how substantially a data type of the second set of input values matches a data type of the first set of input values.

7. Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language of the claims recites the limitation "substantially identical". It is unclear to the examiner how substantially the second input mapping function is identical to the first input mapping function.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-12, 13, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russakovsky et al (US 7,024,417 B1) in view of Tamayo et al (US 6,941,318 B1).

Claim 1: Russankovsky discloses a computer system that allows front end software applications to use multiple data mining models during execution of analytical tasks, the computer system comprising: a model selection module that is operable to use a task name in a task request received from a front-end software application to determine a specific data mining model to be used during the execution of an analytical task ("to invoke a particular mining task, user first chooses a model to apply" Col 5, line 58); and a mapping module that is operable to map input data included in the task request received from the front-end software application into a format usable by the specific data mining model ("A graphical user interface may then be generated using the template, where the user can initialize the fields by indicating a mapping between the terms of the task and the actual data source" Col 4, line 52-53); but he does not explicitly disclose multiple versions of a data mining model during the execution of analytical task. Tamayo discloses an analogous system that generates callable version

of the data mining model to improve the transparency of data mining models. The callable version of the data mining model can be generated or updated (Col 4, line 52-53, updated model is a new version of data mining model). It would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize the advantage of Tamayo's approach and combining Tamayo's approach with Russankovsky's approach. One of the skill in the art would have been motivated to combine Tamayo's approach in Russankovsky's system because it could be more easily interpretable by human users (Col 1, line 53).

Claim 2: Russankovsky and Tamayo disclose the computer system as in claim 1 above; and Tamayo further discloses wherein the mapping module is operable to map input data in the task request into a format usable by any version of the data mining model ("the data involved may be of any type, from any original source, and in any format. System 102 has the capability to utilize and all such data that is available to it" Col 3, line 5-7).

Claim 3: Russankovsky and Tamayo disclose the computer system as in claim 1 above; and Russankovsky further discloses wherein the mapping module is further operable to map output data generated upon execution of the analytical task into a format usable by the front-end software application ("a graphical user interface having a graphical dialog in which the user can initialize the required fields. This may include

prompting the user to provide mapping from terms of the algorithm to an actual data source" Col 6, line 10-13).

Claim 4: Russankovsky and Tamayo disclose the computer system as in claim 1 above; and further disclose wherein the analytical task is a prediction task ("predictor" see Russankovsky Col 3, line 16) and ("prediction" see Tamayo Col 4, line 7).

Claim 5: Russankovsky discloses a computer-implemented method for using multiple data mining model during execution of analytical tasks, the method comprising: obtaining a first task request from a front-end software application ("to invoke a particular mining task" Col 5, line 57); the first task request containing a first set of input values and a task name ("each task having a number of parameters...been assigned some unique name under which it becomes known to the users" Col 5, line 52-55); using the task name to identify a first version of the data mining model to be used when executing a first analytical task ("to invoke a particular mining task, user first chooses a model to apply" Col 5, line 57-58); using a first input mapping function to map the first set of input values into a first set of mapped input values for use by the first version of the data mining model when executing the first analytical task ("prompting the user to provide a mapping from terms of the algorithm to an actual data source" Col 6, line 13-14, the first version of the data mining model is the none updated model); obtaining a second task request from the front-end software application ("having one or more tasks" Col 5, line 51-52); the second task request containing a second set of input values ("each task having a number of parameter" Col 5, line 52) and the task name ("assigned

some unique name under which it becomes known to the users" Col 5, line 55); but does not explicitly disclose the second set of input values being a subset of the first set of input values; using the task name to identify a second version of the data mining model to be used when executing a second analytical task; and using a second input mapping function to map the second set of input values into a second set of mapped input values for use by the second version of the data mining model when executing the second analytical task. However, Tamayo discloses an analogous method that generates callable version of the data mining model to improve the transparency of data mining models. The callable version of the data mining model can be generated or updated (Col 4, line 52-53, updated model is a new version of the data mining model). It would have been obvious to one having an ordinary skill in the art at the time the invention was made to combine Tamayo's callable version of the data mining model with Russankovsky's approach. One having the skill in the art would have been motivated to combine because it could be more easily interpretable by human users (Col 1, line 53). Therefore, all the limitations that do not disclose in Russankovsky's approach will be resolved in this combination.

Claim 6: Russankovsky and Tamayo disclose the computer-implemented method as in claim 5 above; and Tamayo further discloses wherein each one of the second set of input values has a data type that substantially matches a data type of one of the input values from the first set of input values ("the tree is constructed by repeated

partitioning of subsets of X into two descendent subsets or nodes" Col 5, line 50, the subsets of X is substantially match to X).

Claim 7: Russankovsky and Tamayo disclose the computer-implemented method as in claim 5 above; and Russankovsky further discloses having one or more tasks, each task having a number of parameters ("having one or more tasks, each task having a number of parameters" Col 5, line 51-52), but does not explicitly disclose sending a first set of output values generated upon execution of the first analytical task to the front-end software application; and sending a second set of output values generated upon execution of the second analytical task to the front-end software application. However, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that theses limitations are inherent in Russankovsky's approach in order to fulfill the purpose of data mining because his approach performs multiple tasks.

Claim 8: Russankovsky and Tamayo disclose the computer-implemented method as in claim 7 above; and Tamayo further discloses a second set of output values that are a subset of the first set of output values ("the tree is constructed by repeated partitioning of subset of X into two descendent subset or notes" Col 5, line 50-51).

Claim 9: Russankovsky and Tamayo disclose the computer-implemented method as in claim 8 above; and Tamayo further discloses wherein sending a second set of output values that are a subset of the first set of output values includes sending a second set of output values that each individually have a data type that substantially matches a data type of one of the output values from the first set of output values ("the tree constructed by repeated partitioning of subset of X into two descendent subsets or nodes" Col 5, line 50, the subsets of X is substantially match to X).

Claim 10: Russankovsky and Tamayo disclose the computer-implemented method as in claim 7 above; and Russankovsky further discloses a graphical user interface may be generated using template, where the user can initialize the fields by indicating a mapping between the terms of the task and the actual data source (Col 4, line 53-54), but does not explicitly disclose sending a first set of output values generated upon execution of the first analytical task to the front-end software application includes using a first output mapping function to map the first set of output values into a first set of mapped output values for use by the front-end software application; and sending a second set of output values generated upon execution of the second analytical task to the front-end software application includes using a second output mapping function to map the second set of output values into a second set of mapped output values for use by the front-end software application. However, mapping output values into a set of mapped output values for use by the front-end software application (graphical user

interface) is inherent in Russankovsky and Tamayo's approaches in order to fulfill his purpose of performing analytical task.

Claim 11: Russankovsky and Tamayo disclose the computer-implemented method as in claim 10 above; and Russankovsky further discloses having one or more tasks (Col 5, line 51) and a graphical user interface may be generated using the template, where the user can initialize the fields by indicating a mapping between the terms of the task and the actual data source (Col 4, line 51-54), but does not explicitly disclose wherein the second output mapping function is substantially identical to the first output mapping function. However, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that Russankovsky's mapping function performs the functionalities of both first input/output mapping function and second input/output mapping function. One having an ordinary skill in the art would have been motivated to divide the mapping function of Russankovsky's approach into two different mapping functions for mapping the first input/output and second input/output. Therefore, they must be substantially identical.

Claim 12: Russankovsky and Tamayo disclose the computer-implemented method as in claim 5 above; and Russankovsky further discloses having one or more tasks (Col 5, line 51) and a graphical user interface may be generated using the template, where the user can initialize the fields by indicating a mapping between the terms of the task and the actual data source (Col 4, line 51-54), but does not explicitly

disclose wherein the second input mapping function is substantially identical to the first input mapping function. However, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that Russankovsky's mapping function performs the functionalities of both first input/output mapping function and second input/output mapping function. One having an ordinary skill in the art would have been motivated to divide the mapping function of Russankovsky's approach into two different mapping functions for mapping the first input/output and second input/output. Therefore, they must be substantially identical.

Claim 13: Russankovsky and Tamayo disclose the computer system as in claim 5 above; and further disclose wherein the first and second analytical task are prediction task ("predictor" see Russankovsky Col 3, line 16) and ("prediction" see Tamayo Col 4, line 7).

Claim 17: Russankovsky discloses a computer-implemented method for using multiple data miming models during execution of analytical tasks, the method comprising: importing a data mining model having a first set of model values ("import" Col 5, line 20, each model value having a data type ("each parameter having a type" Col 5, line 53); using the data mining model during execution of a first set of analytical tasks requested by a front-end software application ("to invoke a particular mining task, the user first chooses a model to apply" Col 5, line 57-58); and "having one or more tasks (Col 5, line 51, which means there are multiple models for these tasks); but does not

explicitly discloses using multiple versions of a data mining model. However, Tamayo discloses an analogous method for using multiple versions of a data mining model. It would have been obvious to one having an ordinary skill in the art at the time the invention was made to combine Tamayo's method for using multiple versions of a data mining model with Russankovsky's approach. One of the skilled in the art would have been motivated to combine them in order to improve the transparency of data mining models so as to be more easily interpretable by human user (Col 1, line 52-53). Therefore, importing a first/second version of a data mining model... and using first/second version of the data mining model... would have been obvious to one having an ordinary skill in the art for the above reason.

Claim 18: Russankovsky and Tamayo disclose the computer-implemented method as in claim 17 above; and further disclose importing ("import" see Russankovsky Col 5, line 20) a second version of the data mining model having a second set of model values includes importing a second version of the data mining model having a second set of model values that each individually have a data type that substantially matches the data type of one of the model values from the first set ("the tree is constructed by repeated partitioning of subset of X into two descendent subsets or nodes" see Tamayo Col 5, line 50, the subset of X is substantially match to X).

Claim 19: Russankovsky and Tamayo disclose the computer-implemented method as in claim 17 above; and further disclose wherein the analytical task is a

prediction task ("predictor" see Russankovsky Col 3, line 16) and ("prediction" see Tamayo Col 4, line 7).

Claim 20: Russankovsky disclose the computer-implemented method as in claim 17 above; and Russankovsky further discloses exporting mining models to and importing mining models from Predictive Modeling Markup Language (Col 7, line 30).

10. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russankovsky et al (US 7,024,417 B1), in view of Heytens et al (US 2003/0220860 A1)

Claim 14: Russankovsky discloses a computer-implemented method for designing a prediction task comprising: providing a mining model class ("algorithm class" Col 3, line 12) identifier for a data mining model ("the algorithm has been assigned some unique name (identifier) under which it becomes known to the users" Col 5, line 54-55); providing one or more input data fields to hold input information ("a graphical user interface... where user can initialize the fields by indicating a mapping between the terms of the task and the actual data source" Col 4, line 51-54); providing input mapping functionality to map the input information into mapped input information capable of being used by the unique version of the data mining model during execution of the prediction task ("user can initialize the fields by indicating a mapping between the terms of the task and the actual data source" Col 4, liner 51-54); providing one or more output data fields to hold output information generated upon execution of the prediction

task ("a graphical user interface" Col 4, line 51, a graphical user interface include input/output data fields to hold input/output data); providing output mapping functionality to map the output information into mapped output information capable of being used by a front-end software application ("a graphical user interface may then generated using the template, where the user can initialize the fields by indicating a mapping between the terms of the task and the actual data source" Col 4, line 51-54, a GUI is also used for mapping input/output information); but does not explicitly disclose providing a unique version identifier to identify a unique version of the data mining model to be used during execution of a prediction task. Heytens discloses an analogous method for data mining that provides a unique version identifier to identify a unique version of the data mining model to be used during the execution ("graphical interface for identifying models... version number" paragraph 90). It would have been obvious to one having an ordinary skill in the art at the time the invention was made to combine Heytens's approach into Russankovsky's approach. One of the skilled in the art would have been motivated to combine Heyten's approach with Russankovsky's approach in order to create up-to-date knowledge for future response and for learning about the efficacy of the models. This knowledge is also subsequently used to refresh or reformulate such models (paragraph 10).

Claim 15: Russankovsky and Heytens disclose the computer-implemented method as in claim 14 above; but does not explicitly disclose wherein providing input mapping functionality includes providing input mapping functionality that is specific to

the unique version of the data mining model to be used during the execution of the prediction task. It would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that Russankovsky's method performs multiple prediction task with different models (Col 5, line 51-60) and provides a GUI for mapping input/output information (Col 4, line 51) and Heytens's method performs prediction tasks using multiple version of data mining models. Therefore, for the reason of combining them mentioned in claim 14 above, one having an ordinary skill in the art would have been motivated to provide input mapping functionality that is specific to the unique version of the data mining model to be used during execution of the prediction task.

Claim 16: Russankovsky and Heytens disclose the computer-implemented method as in claim 14 above; but does not explicitly disclose wherein providing output mapping functionality includes providing output mapping functionality that is specific to the unique version of the data mining model to be used during the execution of the prediction task. It would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that Russankovsky's method performs multiple prediction task with different models (Col 5, line 51-60) and provides a GUI for mapping input/output information (Col 4, line 51) and Heytens's method performs prediction tasks using multiple version of data mining models. Therefore, for the reason of combining them as mentioned in claim 14 above, one having an ordinary skill in the art would have been motivated to provide output mapping functionality that is specific to

the unique version of the data mining model to be used during execution of the prediction task.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Lee et al (US 6,782,390 B2) discloses execution of multiple models using data segmentation.

b. Ferguson et al (US 6,941,301 B2) discloses pre-processing input data with outlier values for a support vector machine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip H. Nguyen whose telephone number is (571) 270-1070. The examiner can normally be reached on Monday - Friday 10:00 AM - 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y. Zhen can be reached on (571) 272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PN
11/5/06

Wei Zhen
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